SUBSTITUTE CLAIMS

I CLAIM:

1. (currently amended) A radiator for spacecraft having an inside and an outside, the radiator comprising:

an object having a low emissivity ~~outer~~ layer, outer in reference to the inside of the spacecraft; and

a movable covering having a contact mode and a non-contact mode with the low emissivity outer layer, thereby enabling a higher amount of heat to radiate from the object in the contact mode relative to the non-contact mode.

2. (currently amended) The radiator of claim 1, wherein the low emissivity outer layer further comprises an elastic skin ~~and the object further comprises a craft usable in space.~~

3. (currently amended) The radiator of claim 2, wherein the movable covering further comprises a ~~an outer~~ high emissivity layer, outer in reference to the inside of the spacecraft and a ~~an inner~~ layer, inner in reference to the interior of the spacecraft comprising a dielectric.

4. (original) The radiator of claim 3 further comprises a switchable electric power source having a connection to the skin and a connection to the outer high emissivity layer, wherein in a powered mode an electrostatic attraction causes the contact mode.

5. (original) The radiator of claim 4 further comprising a separator ~~functioning to urge~~ urging the movable covering to the non-contact mode.

6. (currently amended) The radiator of claim 4, wherein the outer high emissivity layer further comprises a

thin metallic coating and the dielectric further comprises a film having a ~~high~~ dielectric constant, a ~~high~~ thermal conductivity and a ~~high~~ dielectric strength.

7. (original) The radiator of claim 6, wherein the switchable electric power source is a DC source.

8. (currently amended) A radiator comprising:

a craft having an inside, and having a low emissivity ~~outer~~ layer, outer in reference to the inside of the craft;

a movable covering having a contact mode and a non-contact mode with the low emissivity outer layer;

said movable covering further comprising a composite film with a~~n inner~~ dielectric base layer, inner in reference to the inside of the craft, and an outer high emissivity metallic coating ~~over~~ on the outer side of the inner dielectric base;

a switched power source having a first pole connected to the low emissivity outer layer and a second pole connected to the high emissivity metallic coating; and

wherein a non-powered state of the outer high emissivity metallic coating causes the non-contact mode and a low heat transfer rate away from the craft, and a powered state of the outer high emissivity metallic coating causes the contact mode and a high heat transfer rate away from the craft.

9. (original) The radiator of claim 8, wherein the movable covering is flexible.

10. (original) The radiator of claim 9, wherein the craft is located in space.

11. (original) The radiator of claim 8, wherein the switched power source is DC.

12. (currently amended) A variable heat transfer surface, said surface comprising:

a low emissivity ~~outer~~ layer covering at least a portion of a ~~heat-emitting~~ craft having a heat-emitting inside, the layer outer in reference to the inside of the craft;

a movable covering having a contact mode and a non-contact mode with the low emissivity outer layer;

said movable covering further comprising a composite film with a~~n inner~~ dielectric base, inner in reference to the inside of the craft and a~~n outer~~ high emissivity metallic coating on the outer side of ~~over~~ the inner dielectric base;

a power source connected across the low emissivity outer layer and the high emissivity metallic coating;

a switch to supply power "ON" and "OFF" across the low emissivity outer layer and the high emissivity metallic coating; and

wherein the switch in the "OFF" position causes the non-contact mode and a resulting low heat transfer rate away from the surface, and the switch in the "ON" position causes the contact mode and a resulting high heat transfer rate away from the surface.

13. (original) The variable heat transfer surface of claim 12, wherein the low emissivity outer layer further comprises at least a portion of a craft, said craft being usable in space.

14. (original) The variable heat transfer surface of claim 13, wherein the movable covering is flexible.

15. (original) The variable heat transfer surface of claim 12, wherein the movable covering is flexible.

16. (original) The variable heat transfer surface of claim 12, wherein the power source is DC.

17. (currently amended) A radiator comprising:

a low emissivity ~~outer~~ layer ~~means functioning to~~ cover<u>ing</u> at least a portion of a craft<u>, the layer outer in reference to the inside of the craft</u>;

a temperature control ~~means functioning to control thermal emissivity from the craft; and~~

~~said temperature control means further~~ comprising a movable covering having a contact mode and a non-contact mode with the low emissivity outer layer ~~means~~, thereby enabling a higher amount of heat to radiate from the craft in the contact mode relative to the non-contact mode.

18. (currently amended) The radiator of claim 17, wherein the movable covering further comprises a flexible composite film ~~means~~ further comprising a~~n inner~~ dielectric base<u>, the base inner in reference to the inside of the craft</u> ~~means~~ and a~~n outer~~ high emissivity metallic coating ~~means functioning to~~ cover<u>ing</u> a low emissivity ~~outer~~ layer<u>, the coating outer in reference to the inside of the craft.</u> ~~means.~~

19. (currently amended) The radiator of claim 18, wherein the movable covering further comprises a switched power source having a first pole connected to the low emissivity outer layer ~~means~~ and a second pole connected to the high emissivity metallic coating of the temperature control ~~means~~.

20. (original) The radiator of claim 19 further comprising a DC power source ~~means functioning~~ to draw<u>ing</u> together the low emissivity outer layer ~~means~~ and the temperature control ~~means~~ via an electrostatic force.

21. (currently amended) A radiator comprising:

a low emissivity outer layer ~~means functioning to~~ cover<u>ing</u> at least a portion of a craft<u> having a heat-emitting inside, the layer outer in reference to the inside of the craft</u>;

a temperature control ~~means functioning to control thermal emissivity from the craft;~~

~~said temperature control means~~ further comprising a movable covering having a contact mode and a non-contact mode with the low emissivity outer layer ~~means~~, thereby enabling a higher amount of heat to radiate from the craft in the contact mode relative to the non-contact mode;

wherein the movable covering further comprises a flexible composite film ~~means~~ further comprising a ~~inner~~ dielectric base<u>, the base inner in reference to the inside of the craft</u> ~~means~~ and a~~n outer~~ high emissivity metallic coating<u>, the coating outer in reference to the inside of the craft</u> ~~means functioning to~~ cover<u>ing the</u> ~~a~~ low emissivity outer layer ~~means~~;

wherein the movable covering further comprises a switched power source having a first pole connected to the low emissivity outer layer ~~means~~ and a second pole connected to the high emissivity metallic coating of the temperature control ~~means~~;

wherein the movable covering further comprises a switched power source having a first pole connected to the low emissivity outer layer ~~means~~ and a second pole connected to the high emissivity metallic coating of the temperature control ~~means~~; and

a DC power source ~~means~~ functioning to draw together the low emissivity outer layer ~~means~~ and the temperature control ~~means~~ via an electrostatic force.